Response to Fourth Office Action

This is a response to your office action which rejected claims from our patent application, "Image Transfer and Archival System", filed on July 23, 2001. I have amended all claims to be consistent with 35 U.S.C. 112 (see sections 5, 6, and 7 of your last office response) and made other small changes only for the purpose of clarity.

In section 9 of the last response the examiner wrote, "In response to applicant's argument that there is no suggestion to combine the references," the examiner stated, "In this case, the knowledge is generally available to one or ordinary skill in the art." If the examiner made this statement based on his personal knowledge, I ask him to provide an examiner's affidavit to explain the factual basis to support this statement. If this statement is not based on the examiner's personal knowledge, I ask the examiner to cite one or more references that support such an assertion.

I will address your points one by one, but I believe all the rejected claims should be accepted. The Tanaka patent (U.S. Patent 6,564,256) you rely on heavily, covers different subject matter. In your last response you introduced a patent by Ohtake (U.S. Patent 6,111,591) as prior art for areas where Tanaka does not discuss increasing the size of a queue. The only similarity between Ohtake and our patent application is in the keywords used to describe the invention. Tanaka and Ohtake individually or together do not describe the elements of our invention.

General Comments

Most of your rejections are based upon the prior art of Tanaka (U.S. patent No. 6,564,256). Tanaka describes a client/server arrangement of terminals (i.e. web browsers) and servers to handle discrete events to transmit DICOM image data from a database to the terminals. Tanaka uses multiple servers to overcome the problem of long response times, and fault tolerance, when the terminal makes a request. The relay servers described by Tanaka perform some image compression and format conversion in order to meet the requirements of the terminals (i.e. web browsers). Tanaka describes that the image conversions are solely for the purpose of delivering an image of a compatible type for the terminal, and to make sure the image does not exceed some specified maximum size.

Ohtake (U.S. patent No. 6,111,591) describes a system to improve efficiency of an image processing system that contains multiple input interfaces. Ohtake does this by dividing the buffer into a series of data blocks and uses a scattering approach to store image data in multiple blocks.

Our invention deals with the problem of transmitting volatile images from an image producing device to a server device. Without some kind of queue and image reduction mechanism, these images will be permanently discarded if there is any delay in transmitting the images from the client device to server device. The image producing portion of the client machine uses the limited resources of the client in order to continue generating or analyzing additional images. For this reason, images are placed in a queue

for eventual transfer to the server device. Due to issues such as network congestion or the rapid generation of images, the queue can overflow. Under these conditions, our invention describes a series of steps to prevent images from being permanently discarded and lost. Tanaka describes completely different subject matter. Tanaka never discusses using a queue for image storage. Rather he discusses a cache used to redeliver the image for efficiency. Tanaka does not discuss any image compression means to maximize the chances that at least a limited representation of the original image can be transmitted to the server for storage. A detailed reading of Tanaka against our invention will show that the similarity between the two is limited to transmitting digital images on a network. The image manipulation performed by Tanaka is fundamentally different and for different purposes than described by our invention. Tanaka uses the features of a web server to deliver images in a suitable format for display. Ohtake also describes completely different subject matter. The similarity between Ohtake and our invention is limited to the use of an expandable memory queue to hold image data. Ohtake uses a memory queue to decrease the loads of host systems. Our invention uses a memory queue to increase the amount of time before an image in the queue must be reduced in size or deleted.

I will now address your issues on a claim by claim basis.

Claim 1, the steps,

- optionally making a copy of the image to free up system resources on the client;

You claim this is covered by Tanaka (no reference cited, but in prior responses you cite Tanaka col 5, line 47-55). Tanaka is describing a data cache to accumulate data prior to transferring the image data to the terminal. Tanaka better describes the use of the cache in

col 4, lines 13-19. Tanaka does not describe making a copy of the image on the relay server, archiver, or database. In our invention, the creation of a copy is important, because the client device can free up system resources on the client for other purposes. For example, if the client device is a machine vision system, the image buffer now becomes available to hold another image to be inspected. The image copied to the image queue will be potentially altered prior to transmission to the server. Tanaka does not describe this situation because a request can take as much time, and as many resources, as necessary until it completes. Our invention describes how to maximize the ability to transmit volatile images between a client and server without destroying them. With Tanaka, there is no need for a queue because when the image is available it can be transmitted immediately.

Claim 1, the steps,

- measuring the client resource availability of local resources and available processor time and maintaining historical information and trends;
- measuring the status and performance of the network connecting the client device and server device, and maintaining historical information and trends;

You claim these are covered by Tanaka (col. 6, lines 49-56, col. 10, lines 4-15). In our specification we define resource availability as, "Resource availability 315 is a combination of current resource information as well as historical information and trends. The client transfer mechanism 320 uses this information to decide the amount of resources available to manipulate the image prior to transmission. Resource availability 315 also includes information regarding the availability of image analysis specific resources such as frame buffers and image buffers." The Tanaka references you cite refer to using multiple servers to handle requests from the terminals, to solve a completely different problem. Tanaka does not discuss nor provides any motivation for measuring

the resource availability on the client and maintaining historical trends. Tanaka does not discuss nor provides any motivation for measuring network performance and maintaining historical trends. Tanaka does not describe the motivation why this would ever be useful. It might be helpful to note that Tanaka uses multiple servers to distribute the load of handling requests. A good reference that describes this hardware configuration can be found in wikipedia at http://en.wikipedia.org/wiki/Load_balancing_%28computing%29. In our invention, a single client device has only its internal resources at its disposal to attempt to transfer all image data to a server device. In our invention, load balancing and redundancy does not exist. It is nonobvious to a person having ordinary skill in the art to extend the invention described by Tanaka to produce what this claim describes.

I have studied the portions of Tanaka that the Examiner cites and cannot find any specific or general teaching in Tanaka that states "measuring the client resource availability of local resources and available processor time and maintaining historical information and trends" or "measuring the status and performance of the network connecting the client device and server device, and maintaining historical information and trends." If the Examiner continues to assert that this teaching is in Tanaka, I ask that the Examiner cite exact portions of Tanaka to support the assertion of such specific or general teaching.

Claim 1, the steps,

- placing a copy of the image in a client queue if the image cannot be transmitted immediately;
- increasing the size of the client queue if it becomes full;

Claim 14, the steps,

- placing a copy of the image in a client queue if the image cannot be transmitted immediately to the server device;
- increasing the size of the client queue if it becomes full;

You agree that Tanaka does not disclose this, but assert that Ohtake (col. 1, lines 53-54, col. 2, lines 6-16) teaches the use of an image buffer and enlarging the buffer size when it becomes full. Ohtake actually does not increase the size of a client queue. Ohtake estimates an upper bound of the memory requirements in the buffer, allocates memory blocks to match this requirement, and then stores the image scatterwise (i.e. piecemeal) using the allocated blocks. You assert it would be obvious to one of ordinary skill in the art to modify Tanaka in view of Ohtake "because it allows an image processing system to decrease the loads on host systems." However, even if Ohtake disclosed our method of an expanding queue to hold image data, a person of ordinary skill would be unable to connect both patents. Tanaka never mentions the possibility of failure of processing a request and provides no motivation to attempt to recover from such a state. The only reference by Tanaka states, "Further even if one of the relay servers fails, the other relay servers can act for the fault relay server" (col 4., lines 10-12). In this context, Tanaka is referring to what a load balancer does; using multiple servers to handle a request if one of the servers fails (i.e. stops running). Tanaka does not discuss anything to prevent a request on an individual server from failing because of queue size. Presumably, a system patterned after Tanaka will crash under these conditions, causing the loss of any information on the server. Thus, Tanaka neither teaches nor suggests either the problem or the resolution to the problem as claimed in Claim 1. Given that Tanaka does not address the problem or solution regarding queue size, and Ohtake uses a completely different approach to reduce system load, it is not obvious to modify Tanaka in view of Ohtake. And even if someone were to combine these two patents, it does not cover our

invention. If you were to combine the two patents you would have an image transfer system designed to reduce system load. This does not describe our invention.

Claim 1, the step,

- reducing the size of images to conserve storage space in the queue or to reduce transmission time between the client and server;

Claim 14, the step,

- preventing images from being discarded by reducing the size of said images to conserve storage space in the queue or to reduce transmission time between the client and server;

You claim this is covered by Tanaka (col. 10, lines 53-65). Tanaka describes two things. The first is to convert an image into a format compatible with a web browser. The second is to compress the image if the data size is too large prior to transmission. Tanaka describes the motivation for reduction is when the image data is too large. Tanaka does not describe, or even infer, that size reduction will conserve storage space as an image waits to be transmitted. Tanaka never describes the use of a queue (by name or description) as a means to buffer images waiting to be sent from a client device to a server device. It is nonobvious to a person having ordinary skill in the art to extend the invention described by Tanaka to produce what our invention describes. The cache described by Tanaka is to increase efficiency when the same image is requested for transmission. It does not provide the same type of functionality as the queue described in our invention (see Tanaka col 4, lines 13-19), nor does Tanaka provide any limitation or motivation to extend his invention to do any dynamic image reduction.

With Tanaka, the conversion of the image uses a predetermined format. The conversion is fixed or negotiated between the server and the terminal (i.e. web browser). In our invention, a set of rules is imposed to preserve both the image resolution and content.

However, the image will be permanently and destructively altered, if necessary, to insure that the server device can receive the image given the current network performance and conditions of the client device queue. Tanaka takes an archived image and converts it for display. The original image is not altered in any way. Our invention deals with volatile images that will be deleted unless a means is found to persist them until such time they can be transmitted to a server device. Tanaka does not use image reduction to conserve storage space in a queue; Tanaka uses compression to satisfy a requirement of the web browser. Tanaka makes no mention that size reduction will reduce transmission time; Tanaka states that compression is only performed when "the medical image data is too large in data size."

I have studied the portions of Tanaka that the Examiner cites and cannot find any specific or general teaching in Tanaka that states "reducing the size of images to conserve storage space in the queue or to reduce transmission time between the client and server." If the Examiner continues to assert that this teaching is in Tanaka, I ask that the Examiner cite exact portions of Tanaka to support the assertion of such specific or general teaching.

Claim 2
A system according to claim **1**, wherein the step of increasing the size of the client queue includes an upper limit to prevent the queue from growing beyond a specified size.

Claim 15
A system according to claim 14, wherein the step of increasing the size of the client queue includes an upper limit to prevent the queue from growing beyond a specified size.

You claim this is covered by Tanaka (unspecified reference) and Ohtake (col. 2, lines 6-16). In previous responses you cited Tanaka (col. 10, lines 18-52) because he discloses using only a certain amount of protocol conversion servers. Ohtake uses a determination

means to estimate the upper limit of the memory requirement, allocate sufficient memory blocks to satisfy this requirement, and storing the image data scatterwise in the data blocks. This does not describe our invention. On page 2 of your response you state that Tanaka "fails to teach the limitation further including placing a copy of the image in a client queue if the image cannot be transmitted immediately and increasing the size of the client queue if it becomes full." If Tanaka does not discuss increasing the size of the client queue, he certainly cannot discuss setting an upper bound on the queue size.

Claim 3

A system according to claim 1, wherein the step of transferring the signal from the client to the server can include encrypting the information on the client prior to transmission and decrypting the data once it is received by the server

You argue that claim 3 is unpatentable over Tanaka and Ohtake further in view of Glass because Tanaka and Ohtake teaches the method of claim 1; Tanaka describes a system to transfer medical images between a server and a terminal; Ohtake describes a system for receiving data from a number of host systems. Glass describes encrypting biometric information over a network. Contrary to your assertion, a person of ordinary skill would be unable to connect these three patents. Tanaka and Ohtake never mentions the possibility of failure of processing a request and provides no motivation to attempt to recover from such a state. Thus, Tanaka and Ohtake neither teaches nor suggests either the problem or the resolution to the problem as claimed in Claim 1. Glass deals with encrypting biometric information over a network. However, neither Tanaka nor Ohtake discuss the issue of encryption and provides no motivation for its use. Given that Tanaka and Ohtake do not address the problem or solution regarding queue size, and Glass are

discussing a completely different subject area, it is not obvious to modify Tanaka and Ohtake in view of Glass.

Claim 4

A system according to claim 1, wherein the step of transferring the image signal from the client to the server can comprise:

- transmitting image data from one or more clients to a gateway server, such that the clients consider the gateway server to be a server;
- buffering the image data on the gateway server;
- transmitting image data from the gateway server to the server, such that the server considers the gateway server to be a client.

You claim that Tanaka describes this in col. 5, lines 33-55, col. 6, lines 49-58, and col. 10, lines 4-52. These sections describe how protocol conversion servers and relay servers are used to improve efficiency. The protocol conversion servers described by Tanaka bear no resemblance to the gateway server described in our invention. The relay servers described by Tanaka does bear some resemblance to our gateway server because it adds a server layer between the client and the server. There is one very important difference. The relay servers described by Tanaka cannot be used without modifying the protocol used for transferring command and images because operations are shifted from the terminal to the relay server. In this claim, the gateway server looks like a client device to the server, and as a server device to the client. As a result, a gateway server can be added to the system without any other alterations. Therefore, Tanaka does not describe a system where the server can consider the gateway server to be a client.

Claim 5

A system according to claim 1, wherein the step of reducing the size of an image comprises:

- selecting one or more reduction methods to reduce the image size from a plurality of lossless or lossy compression methods;
- reducing the current image, or any image in the queue when the queue becomes full;

- periodically reducing the size of the images in the queue, using reduction methods when processor resources are available.

Claim 6

A system according to claim 5, wherein the step of selecting one of more reduction methods comprises:

- estimating the reduction in image size possible for a specific reduction method;
- estimating the cost of this reduction where the cost includes the resources required for reduction as well as the time to reduce the image;
- performing the reduction if the cost is allowable and the reduction is considered meaningful;
- evaluating other reduction methods if the desired amount of reduction has not been achieved.

Claim 16

A system according to claim 14, wherein the step of preventing images from being discarded by reducing the size of said images comprises:

- selecting one or more reduction methods to reduce the image size from a plurality of lossless or lossy compression methods;
- reducing the current image, or any image in the queue when the queue becomes full;
- periodically reducing the size of the images in the queue, using reduction methods when processor resources are available.

Claim 17

A system according to claim 16, wherein the step of selecting one of more reduction methods comprises:

- estimating the reduction in image size possible for a specific reduction method;
- estimating the cost of this reduction where the cost includes the resources required for reduction as well as the time to reduce the image;
- performing the reduction if the cost is allowable and the reduction is considered meaningful;
- evaluating other reduction methods if the desired amount of reduction has not been achieved.

Your argument against claims 5, 6, 16, and 17 uses the same Tanaka reference from the 7th step of claim 1 (col 10, lines 53-65). Claim 5 and 6 (and 16 and 17) describe specific actions taken to reduce image size, including "periodically reducing the size of the images in the queue, using reduction methods when processor resources are available," and "performing the reduction if the cost is allowable and the reduction is considered meaningful." Tanaka only describes compression for displaying images in a predetermined format. Since you admit that Tanaka does not teach anything having to deal with a queue becoming full, it is clear that Tanaka does not describe claims 5 or 16. Further, Tanaka makes no mention of selecting reduction methods, weighing the cost of each reduction method, and selecting method or methods to perform a meaningful reduction. Therefore, Tanaka does not describe claims 6 or 17.

Claim 7
A system according to claim **6**, wherein the step of determining if the cost is allowable comprises:

- checking the current system resources to see if sufficient resources and time are available to reduce the image;
- checking historical system resources and trends to estimate future resource availability;
- checking the current network parameters such as available bandwidth and throughput;
- checking historical network conditions and trends to estimate future network conditions.

Claim 18
A system according to claim 17, wherein the step of determining if the cost is allowable comprises:

- checking the current system resources to see if sufficient resources and time are available to reduce the image;
- checking historical system resources and trends to estimate future resource availability;
- checking the current network parameters such as available bandwidth and throughput;
- checking historical network conditions and trends to estimate future network conditions.

You reference Tanaka (col 6., lines 49-56, col. 10, lines 4-15) as prior art. In both of these references, Tanaka states that "the relay server can distribute the requests to other relay servers" and "the protocol conversion servers can distribute the requests to other protocol conversion servers." In other words, Tanaka is describing load balancing to improve efficiency. Tanaka provides no other details. Tanaka does not discuss nor provides any motivation for verifying if sufficient system resources and time exist to reduce an image. Tanaka does not discuss nor provides any motivation for using historical trends to estimate future resource availability. Tanaka does not discuss nor provides any motivation for checking current network bandwidth and throughput. Tanaka does not discuss nor provides any motivation for estimating future network conditions using historical trends. Therefore, Tanaka does not describe claims 7 or 18.

Claim 8
A system according to claim **1**, wherein the step of transferring the image signal from the client device to the server device comprises:

- storing the received image in a server queue or on a networked file system;
- increasing the size of the server queue if it becomes full;

- reducing the size of images to conserve storage space in the queue or to reduce storage requirements in the image database.

This claim describes how the server device is designed in a similar manner as the client device. Tanaka has no provision for a queue on both ends of the system (i.e. at the client device and the server device). Tanaka makes no mention of a queue to store a pending list of images waiting for storage. Tanaka uses a cache to improve efficiency but Tanaka does not discuss nor provides any motivation for using a cache as a queue to store transient images. You reference Tanaka (col. 10, lines 18-39) as describing increasing the size of the server queue if it becomes full. However, on page 3 of your most recent response you state, "Tanaka fails to teach the limitation further including placing a copy of the image in a client queue if the image cannot be transmitted immediately and increasing the size of the client queue if it becomes full." In our invention, the design of the server queue is similar to the client queue. Since you admit that Tanaka does not describe this queue, Tanaka does not describe claim 8.

Claim 9

A system according to claim **8**, wherein the step of increasing the size of the server queue includes an upper limit to prevent the queue from growing beyond a specified size.

You claim this is covered by Tanaka (col 10, lines 18-52) because he discloses using only a certain amount of protocol conversion servers. Tanaka is not describing what we describe in claim 9. Tanaka does not use the protocol conversion servers as a queue. He uses them for fault tolerance and efficiency. The notion of increasing the size of a queue up to a certain size has no parallel in Tanaka's invention because the hardware

configuration is static. It is nonobvious to a person having ordinary skill in the art to extend the invention described by Tanaka to produce what our invention describes.

On page 3 of your most recent response you state, "Tanaka fails to teach the limitation further including placing a copy of the image in a client queue if the image cannot be transmitted immediately and increasing the size of the client queue if it becomes full." If Tanaka does not discuss increasing the size of the client queue, he certainly cannot discuss setting an upper bound on the queue size. Therefore, Tanaka does not describe claim 9

Claim 10

A system according to claim **8**, wherein the step of reducing the size of an image comprises:

- selecting one or more reduction methods to reduce the image size from a plurality of lossless or lossy compression methods;
- reducing the current image, or any image in the queue when the queue nears or becomes full;
- periodically reducing the size of the images in the queue, using lossless compression methods when processor resources are available.

Your response indicates this is disclosed by Tanaka and Ohtake further in view of Lopresti (6,298,173). You added Lopresti because Tanaka and Ohtake "fail to teach the limitation further including selecting one of more reduction methods to reduce the image size from a plurality of lossless or lossy compression methods and using lossless compression methods when processor resources are available." Lopresti describes a storage management system that follows "storage preference rules" to maintain high quality images while attempting to reduce storage requirements. The Lopresti system can presumably take as much time as necessary to analyze and reduce images given a set of preferences based on the size and age of a document. For example, the Lopresti system, once configured, will analyze and reduce a particular image identically each time the

image is analyzed. In our invention the reduction is dynamic in nature, and only applied when necessary to prevent images from being deleted. The goal of our invention is to preserve all images produced by the client device. However, because of network bandwidth, and the speed at which new images are added to the queue, our reduction regime must be imposed to preserve the exact representation of the image, or at least an image with as little destruction as possible. Lopresti has a completely different goal and method. Lopresti has no notion of these temporal requirements, nor does it discuss the compression in the context of our invention. You state that the motivation to use Lopresti is "because it allows for good data compression performance." In our invention, the saving of space is a by-product of the need to transfer image signals from a client device to a server device, and is not driven by data compression performance. Our invention will produce a varying amount of compression and reduction, or no reduction at all, depending on the current status of the system and network.

You argue that claim 10 is unpatentable over Tanaka and Ohtake in view of Lopresti because Tanaka teaches the method of claim 8. Tanaka describes a system to transfer medical images between a server and a terminal. Ohtake describes a system to handle multiple host systems. Lopresti describes reducing storage space of text and images in a storage management system. Contrary to your assertion, a person of ordinary skill would be unable to connect these three patents. Neither Tanaka or Ohtake teaches or suggests either the problem or the resolution to the problem as claimed in Claim 8. Lopresti discloses how the size of an image database can be reduced by using lossless and lossy reduction methods. Lopresti is not directed to solving any problem related to image

transfer, dynamically reducing transient images, or a time-constrained reduction process. Neither Tanaka nor Ohtake discuss the issue of saving space in an image database and provides no motivation for its use. Since Lopresti is discussing a completely different subject area, it is not obvious to modify Tanaka and Ohtake in view of Lopresti. Therefore, a combination of Tanaka, Ohtake, and Lopresti does not describe claim 10.

Claim 11

A system according to claim **10**, wherein the step of selecting one of more reduction methods comprises:

- estimating the reduction in image size possible for a specific reduction method;
- estimating the cost of this reduction where the cost includes the resources required for reduction as well as the time to reduce the image;
- performing the reduction if the cost is allowable and the reduction is considered meaningful;
- evaluating other reduction methods if the desired amount of reduction has not been achieved.

Your response states that claim 11 is covered by Tanaka (col. 10, lines 63-65) as well as Ohtake (no reference cited). However, there is nothing in Tanaka or Ohtake that describes this reduction regime. Neither Tanaka nor Ohtake discusses or provides any motivation for estimating the reduction in image size for a specific reduction method. Neither Tanaka nor Ohtake discusses or provides any motivation for estimating the time and resource expense for reducing an image. Neither Tanaka nor Ohtake discusses or provides any motivation for reducing an image if the reduction is considered meaningful. Neither Tanaka nor Ohtake discusses or provides any motivation for evaluating other reduction methods as needed. Therefore, Tanaka and Ohtake does not describe claim 11.

Claim 12

A system for transmitting digital image signals from a client device to a server device, comprising:

- establishing a connection between one or more client devices and server device;
- optionally making a copy of the image to free up system resources on the client;
- dividing the available network bandwidth between the client and server into one or more pieces and assigning certain images to be transmitted using these reserved channels;
- placing a copy of the image in a client queue if the image cannot be transmitted immediately;

- measuring the client resource availability of local processor resources and available processor time, and maintaining historical information and trends;
- measuring the status and performance of the network connecting the client device and server device, and maintaining historical information and trends;
- increasing the size of the client queue if it becomes full; reducing the size of images to conserve storage space in the queue or reduce transmission time between the client and server;
- transferring the image from the client device to the server device;
- persisting the image on the server device until it is processed or saved.

Claim 12 can be analyzed like Claim 1. To summarize those arguments, Tanaka does not discuss or provides any motivation for storing transient images in a queue, measuring resource availability, and transforming images as necessary to conserve space in a queue. Ohtake does not increase the size of the client queue. Rather, Ohtake estimates an upper bound of the memory requirements in the buffer and allocates sufficient memory to match this requirement. Neither Tanaka nor Ohtake discusses resource availability, measuring network performance, or reducing images to conserve storage space. There is one additional step, "dividing the available network bandwidth between the client and server into one or more pieces and assigning certain images to be transmitted using these reserved channels." You cite Tanaka (col. 5, lines 47-55) as "disclosing using different relay servers and piecing the image". However, this section of Tanaka describes using a cache to accumulate pieces of medical image data to be transmitted to a terminal. Tanaka does not discuss nor provides any motivation for reserving bandwidth between client and server and assigning certain images to use this reserved bandwidth. Therefore, Tanaka and Ohtake does not disclose claim 12.

Claim 13

A system according to claim **12**, wherein the step of reserving network bandwidth comprising:

- specifying the mapping of image type to a reserved piece of network bandwidth;
- using any remaining, unreserved network bandwidth for images that do not have any defined mapping;
- allocating a separate queue for each piece of network bandwidth or allocating elements from a single queue;

- identifying the type of image and routing this image to the appropriate piece of network bandwidth or queue;

You cite Tanaka (col. 9, lines 1-37) as disclosing using different servers for different types of image data. However, claim 13 describes the assignment of network bandwidth based on image type and importance. The assignment of bandwidth is very different than the assignment of server. Tanaka does not discuss or provides any motivation for specifying a mapping of image type to a reserved piece of network bandwidth. Tanaka describes that certain terminals will send their requests to a particular protocol conversion server. Tanaka does not discuss or provides any motivation for using unreserved network bandwidth for images that have no defined mapping. Tanaka does not discuss or provides any motivation for allocating a separate queue for each piece of network bandwidth. Tanaka does not discuss or provides any motivation for identifying the type of image and routing the image to the appropriate network bandwidth or queue. Therefore, Tanaka does not disclose claim 12.